Watch. Practice. Understand. | Lesson 256

Calculus Section 1 5 Exponential Models

Watch the matching video: https://www.youtube.com/watch?v=LgwuwP-bMGo

Practice focus: Exponential functions and models

Original extra practice matched to the listed lesson topic.

Name: _____ Date: _____ Show your reasoning and check units.

01 Solve 3^(x + 1) = 81.

02 A population starts at 500 and doubles every 3 hours. Find its size after 9 hours.

03 An item worth $800 loses 15% of its value per year. Find its value after 2 years.

04 Find the y-intercept, horizontal asymptote and range of y = 2^x - 3.

Worked answers | Lesson 256

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Practice focus: Exponential functions and models

Original extra practice matched to the listed lesson topic.

01 Solve 3^(x + 1) = 81.

81 = 3^4, so x + 1 = 4 and x = 3.

02 A population starts at 500 and doubles every 3 hours. Find its size after 9 hours.

P(t) = 500(2)^(t/3). P(9) = 500(8) = 4000.

03 An item worth $800 loses 15% of its value per year. Find its value after 2 years.

V = $800(0.85)^2$ = $578.

04 Find the y-intercept, horizontal asymptote and range of y = 2^x - 3.

At x = 0, y = -2. Asymptote y = -3; range (-3, infinity).